CUBIT Capability Proposal

Technical Area Geometry, Meshing, Infrastructure, GUI, Graphics, etc..	**Technical Lead** Cubit Developer in charge of technical area
Geometry	Byron Hanks

MRD Description

Describe the capability in terms of how a user would see it.

Enhance robustness of virtual partitioning by using real geometry operations to calculate new partitions.

SRS Description

What needs to be done by Cubit developers to implement this capability? Break the tasks into steps if applicable. (Steps should be on the order of 2 man-weeks or more)

1. Determine what real geometry operations would be needed to replicate current virtual partitioning capabilities.
2. Determine the advantages/disadvantages of storing partitioned kernel (ACIS, for example) surfaces as opposed to storing faceted representations.
3. Determine feasibility of using existing partition infrastructure for new implementation.
4. Implementation.

Justification

Describe why this is important and what impact it will have if it is implemented. (or not implemented).

The current virtual partitioning in CUBIT has manifested robustness issues because of its facet-based implementation. It is proposed that a new implementation be pursued that relies on the underlying solid modeling kernel to perform the partitioning operations. This would eliminate many of the current robustness issues that stem from reliance on facet-based operations. Based on users' feedback the robustness issues of virtual partitioning inhibit the effective use of virtual geometry to facilitate meshing.

This capability would have possible overlap with the Goodyear needs.

Resources Who will work on this	**Time estimate** How much time will it take in man-weeks	**Targeted Release** 10.2 (August 06), 10.3 (March 2007), 10.4 (August 2007), Future (beyond FY07)
?	3 man months	10.2

Submitted By:	**Date:**
Brett Clark	24-March-2006